

Perspectives on Nursing Theory

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IN RECENT YEARS, the discipline of nursing has invested considerable time and effort in developing knowledge about theories, models and conceptual frameworks in order to direct nursing practice and establish the boundaries of its knowledge. Nursing conferences, journals and graduate curricula reflect this interest and concern. Nurses are now asking: What is nursing theory? What theory can nurses use? What is a theory as opposed to a conceptual framework? Although some of us may at times be dissatisfied and impatient at the speed with which these questions are being answered, we can perhaps gain a better understanding of theory development by looking at the total process objectively. Furthermore, the evaluation of nursing theory may be more appropriate and useful if the evaluator is aware of the stages of scientific development.

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STAGES OF SCIENTIFIC DEVELOPMENT

Paradigms and Preparadigms

The dissent and confusion about "what is theory" and "what is nursing theory" may be typical of the early stages of scientific development in any discipline. Kuhn, in *The Structure of Scientific Revolutions*,¹ presents a fascinating thesis on the development of scientific knowledge; some of his points may shed considerable light on nursing's present concern with theory. Kuhn points out that the early stage of scientific development, the preparadigm stage, is characterized by divergent schools of thought which, although addressing the same range of phenomena, usually describe and interpret these phenomena in different ways. Nursing appears to be now in this preparadigm stage.

Kuhn challenges the commonly held belief that scientific knowledge advances through slow and steady increments; he proposes that while accumulation of knowledge plays a major role in the advances of scientific knowledge, progress occurs as a result of scientific revolution. Kuhn's model of the development of scientific knowledge may be represented as given in Figure 1. In each revolution, a prevailing paradigm with its associated theories, concepts and research methods is overthrown when anomalies in the accumulating data cannot be accounted

for. Then a new paradigm with its own theories, concepts and methods, which more fully accounts for the anomalies, replaces the prevailing paradigm. If a paradigm is to prevail in a discipline, it must attract an enduring group of adherents away from competing scientific orientations, and it must be sufficiently open-ended to leave all sorts of scientific problems to solve.^{1(p19)}

The paradigm of interest in this article is the *metaparadigm*. This is a gestalt or total world view within a discipline; it provides a map which guides the scientist through the vast, generally incomprehensible world. It gives focus to scientific endeavor which would not be present if scientists were to explore randomly.

The metaparadigm is the broadest consensus within a discipline. It provides the general parameters of the field and gives scientists a broad orientation from which to work. A more restricted type of paradigm is the *exemplar*. This paradigm is more concrete and specific than a metaparadigm.^{1(p175)} A discipline may have several exemplar paradigms which direct the activities of scientists. For example, in the field of social psychology scientists may group according to their agreement on the model of human nature: noble (Maslow), hedonist (Skinner) and cognator (Mead). This discussion of the metaparadigm and the exemplar paradigm will make the reader aware that the two types of paradigms exist, differentiated primarily on their level of

FIGURE 1. PROCESS OF SCIENTIFIC REVOLUTIONS

paradigm₁ → normal science → anomalies → crisis → revolution → paradigm₂

abstraction; a metaparadigm may subsume several exemplar paradigms.

In summary, the metaparadigm or prevailing paradigm in a discipline presents a general orientation or total world view that holds the commitment and consensus of the scientists in a particular discipline. In general the paradigm: (1) is accepted by most members of the discipline, (2) serves as a way of organizing perceptions, (3) defines what entities are of interest, (4) tells the scientists where to find these entities, (5) tells them what to expect and (6) tells how to study them (i.e., the research methods available).

What do paradigms have to do with nursing theory? Kuhn's discussion of paradigms suggests that the metaparadigm and the exemplar paradigm are endorsed by a discipline and its subgroups because of their scientific-empirical support. The existence of a prevailing paradigm facilitates the normal work of science. Research is purposeful, orderly and raises few unanswerable questions.

When a dominant paradigm does not exist, a discipline may be in a crisis situation characterized by competing paradigms or it may be in a *preparadigm* stage with different, ill-defined perspectives that are heatedly argued and de-

fended. In the preparadigm stage of a discipline, there is little agreement among its scientists as to what entities are of particular concern, where to locate these entities or how to study them. Such is the status of nursing today, with energy going into attempts to justify one of several embryonic paradigms rather than into purposeful, orderly research. Confusion prevails as to what exactly nursing should be studying; the research that is conducted is often poorly focused and unsystematic.

Kuhn's theory of paradigms and scientific revolution suggests that the development and evaluation of knowledge in nursing may proceed at a very slow pace, not because nurse-scientists lack the necessary ability to develop empirically-based scientific knowledge but because so much time is being devoted to justifying the various preparadigms. Until there is a prevailing paradigm and exemplar paradigms to give focus to the thinking and work of nurse-scientists, knowledge in nursing will develop slowly and somewhat haphazardly. This leaves the practicing nurse in a difficult position of deciding what knowledge is usable and how it should be evaluated for use.

Nursing as a Preparadigm Science

If Kuhn's conception of science is correct and if nursing is indeed in the preparadigm stage, then the time spent in defending one of the existing nursing conceptualizations,² the present concern with conceptual frameworks, models, theory construction and research methods are all part of an evolutionary

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process that other disciplines have either experienced already or have yet to face. Although this period of theory development in a discipline is characterized by ambiguity and uncertainty, nurse-scientists can help build the knowledge base that will help formulate an acceptable paradigm. They can do this by being well informed in a substantive area and participating actively in both theory construction and research. Nursing cannot decree that a specific paradigm will be adopted; the adoption of a paradigm will be based on its scientific credence and its potential for advancing scientific knowledge in nursing.

The preparadigm stage of science is one of confusion and frustration, with much dispute over theory, research and frequent factional power struggles. Nurse-scientists who realize this may be able to raise themselves above the battleground and focus their efforts and skills on developing sound nursing knowledge. Their work to solve very specific nursing-care problems may contribute significantly to developing exemplar paradigms and a predominant paradigm in nursing. The predominant nursing paradigm, when developed, will make it possible for other nurses to define more clearly their own "turf" or subject matter. While working on knowledge for practice, nurse-scientists must at present tolerate loosely constructed theoretical notions. This preparadigm stage of nursing science is not only difficult for those developing theory and research but also for those attempting to evaluate and use nursing knowledge.

THE DEVELOPMENT OF THEORY

The Nature of Theory

Before addressing the question of theory evaluation, the term *theory* must be defined. In common usage, the meaning of theory ranges from a hunch or a speculative explanation to a body of established knowledge. Kaplan, in *The Conduct of Inquiry*, elaborates on the process of theorizing, suggesting that theory formation may well be the most important and distinctive attribute of human beings. He does not perceive theorizing as a process removed from experience³ as opposed to brute fact.^{3(p294)}

In science, the term *theory* refers to a set of verified, interrelated concepts and statements that are testable. In his discussion of the human ability to develop scientific theory, Kaplan says:

In the reconstructed logic, . . . theory will appear as the device for interpreting, criticizing, and unifying established laws, modifying them to fit data unanticipated in their formulation, and guiding the enterprise of discovering new and more powerful generalizations. To engage in theorizing means not just to learn by experience but to take thought about what is there to be learned.^{3(p295)}

Nurses will do well to remember the vital part that experience plays in theorizing.

Since a theory is a validated body of knowledge about some aspect of reality, it is appropriate that in developing theory nurses should concern themselves with identifying aspects of reality they wish to focus on, developing

relevant theory and evaluating the soundness of the knowledge they develop. The scientist, in developing theory, looks for lawful relationships, patterns or regularities in the empirical world. Such relationships between concepts, sets of facts or variables are carefully studied in order to identify conditions that modify or alter the original relationship.

Few "theories" in nursing or related disciplines are sufficiently well developed to permit specification of both lawful relationships and the condition under which these relationships vary. One possibility is behavior modification theory, which expresses a lawful relationship between specified behavior and reinforcement. Furthermore, this relationship may alter according to the type of reinforcement schedule employed.

Relationship between Theory and Practice

Kaplan stresses the interrelatedness of theory and experience. In nursing, scientists and practicing nurses are frequently out of touch with one another. The nurse-scientist is a thinker unconcerned with the practice setting, while the practitioner is a provider of nursing care and is sometimes referred to as a technician. But it is from the practice setting that the nurse-scientist should derive ideas, and it is for the nurse in the clinical setting that ideas are developed. If the nurse-scientist is to be the major developer of theoretical knowledge, the practitioner must be in a position to provide the nurse-scientists with research-worthy problems and, at

the same time, must be able to evaluate the knowledge generated for its soundness and applicability. A similar symbiosis has been highly successful in other fields. For instance, the theoretical physicist develops ideas and the engineer applies those ideas for the practical benefit of human beings.

Nursing has a mandate from society to use its specialized body of knowledge and skills for the betterment of humans. The mandate implies that knowledge and skills must grow in such a way as to keep up with the changing health goals of society. Furthermore, nursing must regulate its own practice, control the qualifications of its practitioners and implement *newly developed knowledge*.

The majority of nurses are clearly "doers" or practitioners. However, the discipline must also include scientists dedicated to generating knowledge. These scientists must be committed to finding things out, to obtaining an understanding and explanation of

Nursing practice and nursing science are not antithetical; each depends on the other.

phenomena in their world and to identifying means for controlling significant phenomena. Nursing practice and nursing science, as pointed out earlier, are not antithetical; each depends on the other. It is important that theory be useful and encompass significant concepts and conditions that can be applied and favorably altered in the clinical setting.

42 *Drawing on Work in Other Disciplines*

Nursing draws on theories and knowledge from the disciplines of psychology, sociology and physiology. This is entirely legitimate; there is no reason for nurse-scientists to spend years of hard work duplicating knowledge that already exists but is housed in other disciplines. However, theory from another discipline must first be empirically validated to determine if its generalizations are applicable to nursing and its particular problems and needs. For example, generalizations from cognitive dissonance theory should be assessed to see if they can be used by nurses in practice settings; it is conceivable and, in fact likely, that modifications will first be necessary.

A large number of hours has been expended by social scientists in developing empirically based theoretical frameworks on role and social exchange. If nurses and nurse-scientists wish to employ these two sets of knowledge, they will need to determine how, when and where the concepts and empirical generalizations are applicable. In making this evaluation, they are likely to identify conditions unique to nursing practice which alter the social scientists' generalizations; they may also find they need to expand the original theory.

Types of Theory: Grand versus Circumscribed

If the discipline of nursing is indeed in the preparadigm stage, consideration must be made for the level of theory development. Given a set of criteria for

evaluating theory, the evaluator must make a decision as to what can be considered to be theory. A body of knowledge which is in the preparadigm stage cannot be evaluated as rigorously as a theory, nor can formulations which are "grand theories" or philosophies about nursing. They provide neither solid nor practical foundations for nursing practice; they are difficult to evaluate for their scientific value.

A theory in the early stage of development is characterized by discursive presentation and descriptive accounts or anecdotal reports to illustrate and support its claims. The theoretical terms are usually vague and ill defined, and their meaning may be close to everyday language. A paradigm at this embryonic stage is very readable and provides a perspective rather than a set of interrelated theoretical statements. This type of formulation *lacks empirical support*; the empirical illustrations accompanying it are not tests of the theoretical perspective.

This type of formulation, the "grand theory" or "general orientation," is aimed at explaining the totality of behavior.⁴ Grand theories tend to use vague terminology, leave the relationships between terms unclear and provide formulations that cannot be tested. Examples of grand theory might be Parsons' theory of Social Systems, Rogers' formulations of nursing theory,⁵ crisis theory and some of the stress formulations. All present unique ways of looking at reality, but their ill-defined terms and questionable linkages between concepts make them impossi-

Social scientists are more successful in developing and testing partial or circumscribed theories than untestable grand theories.

ble to put into operation and test empirically—and testability of a theory is one of the most important conditions a formulation must meet.⁶

In addressing the problem of grand theories, Merton makes a plea for scientists to move into the study of partial theories.⁴ Since this plea, social scientists seem to have been successful in developing and testing partial or circumscribed theories. These circumscribed formulations may become exemplar paradigms; the move from grand formulations to circumscribed theory may take a discipline from a preparadigm stage to a paradigm stage with exemplar paradigms.

Circumscribed theories focus on selective aspects of behavior such as communication, social exchange, role behavior and self-consistency. In time, these formulations may lead to explication of theoretical terms and hypotheses which can be tested by carefully designed studies. The cumulative research and resulting theory is sound. Of the paradigms developed, one may eventually predominate, several may combine into a new paradigm which will address a larger part of reality, and several may coexist as exemplar paradigms.

The circumscribed theories on which scientists focus may seem irrelevant and

unimportant when compared to the complex day-to-day problems confronted by nurses. Yet nurses must recognize that such complex problems cannot be solved quickly—as is evident in the enormous number of hours this country has spent trying to determine what cancer is and how it develops. Complicated scientific problems usually must be broken down into smaller, more manageable parts and tackled one by one. The scientific process for developing knowledge is slow, but it is the only sure one we have.

The norms that guide scientific activities seem to be universal; they are not specific to a discipline or country.⁷ These norms include the need for public discourse on knowledge; the need for establishing the validity of scientific work; the need for critical assessment of both theory and research; and the need for empirical, objective work which can be replicated by others. It is in a milieu influenced by these norms that knowledge is generated and theory is developed; thus the outcome of the scientific process, the scientist's major goal, is achieved. If theory application is to contribute to the advancement of knowledge and to the professional code of ethics, nurse-scientists must adhere to these norms when developing knowledge.

EVALUATION OF THEORY

Scientists have a variety of criteria for assessing knowledge. They examine their theories for explanatory and predictive power, for parsimony, generality,

scope and abstractness.^{7,8} For nurse-scientists, there is also a subset of criteria relating to the application of a particular theory in clinical practice. The following questions might be asked for such a theory: Is it internally consistent or *logically adequate*? How sound is its *empirical support*? Does the theory present concepts and conditions which the nurse can actually *modify*? Can the theory be used in bringing about *major, favorable changes*?

Logical Adequacy (Diagramming)

Since a theory is a set of interrelated concepts and theoretical statements, its structure can be analyzed for internal consistency or logic.^{7,9} This involves examining the syntax of the theory rather than its content. If the structure is inconsistent or illogical, then empirical testing may not provide a test of the theory itself but only of unrelated or loosely related hypotheses.

One method for examining a theory's internal consistency involves identifying all the major theoretical terms. These may include constructs, concepts, operational definitions or referents. Once identified, each term can be represented by a symbol. Use of symbols serves to decrease the evaluator's bias and thus lessens the likelihood that substantive meaning will be attributed to the theory when it is not present.

The next step is to identify the relationships or linkages between terms. The linkages are usually expressed as follows: direction, type of relationship (positive or negative) and form of rela-

tionship.⁸ Symbols are used to signify the linkages; if the theory does not specify a linkage, this will become obvious as the structure of the theory is diagrammed.

To illustrate this process, consider the statement "high role conflict experienced by a person results in less communication with coworkers" and the statement "frequent communication with coworkers is associated with job satisfaction." The structure of these two statements would then be as shown in Figure 2. Diagramming these statements shows clearly that there are no contradictions in the specified linkages, and that there is no link specified between role conflict and satisfaction. This type of diagramming makes it possible to identify gaps, contradictions and overlaps. Linkages between constructs, concepts and operational definitions can also be diagrammed. (See Figure 3.) Diagramming a theoretical formulation will clearly show whether the hypothesis to be tested flows logically from the more abstract theoretical statements.

FIGURE 2. TYPICAL LINKAGE DIAGRAM

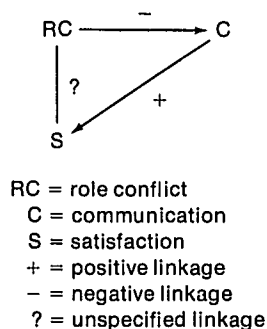
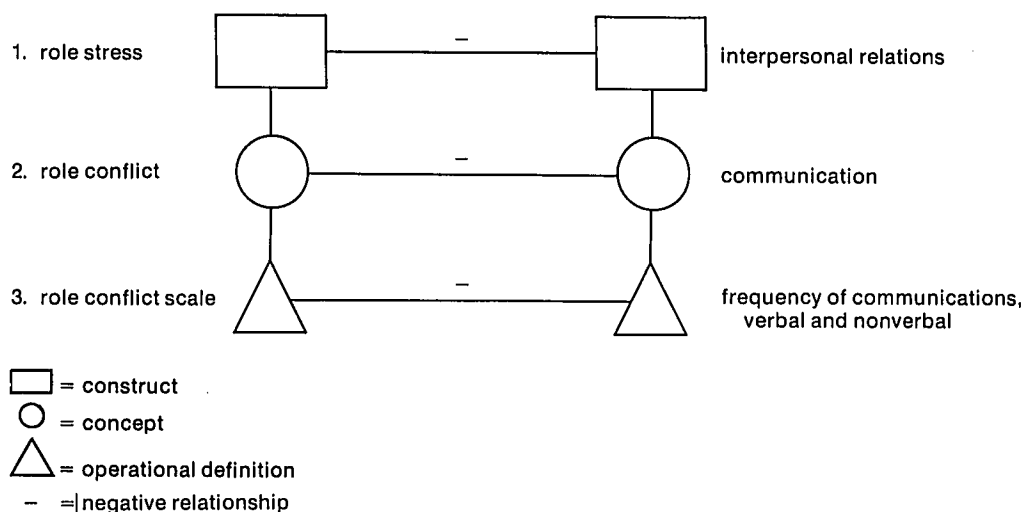


FIGURE 3. LINKAGE DIAGRAM SHOWING RELATIONSHIPS BETWEEN TERMS*



*The terms become more concrete as one moves from statement 1 to statement 3. The terms in statement 1 are constructs; in statement 2, concepts; in statement 3, operational definitions. Statement 3 is the testable hypothesis derived from statement 1 which is a proposition. For a more detailed explication of this type of diagramming see Gibbs (1972).

Empirical Adequacy

Empirical validity is perhaps the single most important criterion for evaluating a theory which is to be applied in a practice setting. However, a theory cannot be empirically valid if it is logically inadequate. Many theories are proposed but only a few are testable. Unfortun-

ately, it is all too easy to select a theory which seems plausible or fits our own belief system and then use it in teaching students and working with patients. Among others, popular theories which have such questionable empirical support are psychoanalytic theory, crisis intervention theory and Erickson's theory of developmental crisis.

ASSESSMENT OF EMPIRICAL SUPPORT

Assessing the empirical support for a theory is a rigorous but exciting puzzle-solving activity which involves several independent but closely related steps. Suppose an individual is planning to go to a major theoretical work and attempt to identify the key theoretical terms and

It is all too easy to select a theory which has questionable empirical support but seems plausible or fits our own beliefs, and then use it in teaching students and in working with patients.

the linkages between them. This process is identical to the processes used in determining the internal consistency of the theory, and a linkage diagram is used. When the individual has diagrammed the theory and identified predictions and hypotheses, it is necessary to examine the empirical support which actually exists. This requires going to the literature and identifying related studies.

After the pertinent studies have been reviewed, they may be classified according to the strength of their research methodology and the empirical support given to the hypotheses tested. Care must be taken in judging which studies represent valid empirical tests of the theory. Case studies, anecdotal reports or descriptions of processes presented in discursive accounts of the theory do not constitute empirical tests. Such accounts are generally presented to give the reader the feeling that the theory is plausible and congruent with life events. This type of material may, however, be used to assess the theory's potential scope and generality.

It should not be forgotten that researchers usually have vested interests in their studies and may have introduced biases that alter the interpretation of the findings. During the critical reading, a study's hypotheses and their empirical referents may be diagrammed, as may the empirical relationship found between the concepts. The congruence between theoretical predictions and empirical outcomes can then be readily assessed in a relatively objective manner.

FACTORS TO CONSIDER

In evaluating research, possible changes in meaning of terms and concepts should be kept in mind. For example, in the literature of the 1950s on therapeutic communication theory, the concept of negative feedback may have been defined as derogatory (negative) communication, while in the 1970s, negative feedback has been redefined to mean any communication that alters (increases or decreases) the communication of the other person.

In analyzing a theory and its empirical support, it is necessary to determine that the hypotheses tested are clearly deduced from the theory. If they are not, the research is not testing that theory. In examining theoretical terms and their corresponding operational definitions, one's immediate concern is with the validity of the operational definitions. A theory may be logically sound—the hypotheses may follow clearly from it and be stated in a form that can be confirmed or rejected—but if the operational definitions do not reflect the meaning of the theoretical concepts, the research is not really addressing the theory and results will have limited or no bearing on it.

To complete the assessment, the entire body of relevant studies must be evaluated in terms of the extent to which it supports the theory, or some part of the theory. This assessment should result in a decision as to whether empirical support is sufficient to warrant the theory's application. The absolute

necessity for determining the empirical adequacy of a theory cannot be overemphasized. If nurses are taught "theories" that have little or no empirical support, the nursing care interventions based on such "theories" may have deleterious effects on clients who believe in the nurse's skill, expertise and competence. And indeed there has been a tendency to base nursing actions on tradition, intuition and conceptual frameworks which seem sound but have not been empirically tested. Though they may be creative and may give nurses a sense of security in what they do, these sources of knowledge remain in the realm of myth and nonscientific knowledge.

For example, even if a conceptual framework for crisis intervention makes intuitive sense to a nurse, using it as a basis of action when it does not have sound empirical support is a serious error in judgment and one that has considerable ethical implications. There is a need to develop and use empirically sound scientific knowledge if nursing is to retain its reputation as a profession. And the process of evaluating a theory empirically should be shared with students since they, as practicing nurses, should carry out this same process for the remainder of their nursing careers.

Usefulness and Significance

Since nursing is an applied profession, it follows that relevant theories are those which nurses may use in the clinical setting. After a theory has been identified as having internal consistency and strong empirical support, can it actually

be put to use by a nurse? The theory is *useful* to the degree that the practitioner is able to control, alter or manipulate the major variables and conditions specified by the theory to realize some desired outcome. Knowing multiple sclerosis is caused by a virus that lies dormant in a person for 30 years does not provide nurses with a basis for immediate intervention. On the other hand, the awareness of the empirical association between smoking and both lung cancer and heart disease allows the nurse to manipulate variables that can decrease the occurrence and severity of these diseases. Here theoretical knowledge is useful. Inhaling carcinogens from cigarettes is an activity over which the nurse can exert some influence, either through persuading individual patients not to smoke or by assisting in more general public education efforts.

Related to the usefulness of a theory is its *significance*. Given two theories which are internally consistent, have strong empirical support and encompass variables that the nurse is able to modify, what else should influence the choice of which theory to use? Assuming that both are focused on the same nursing problem, presumably the nurse would act on the one which would bring about the *strongest, most favorable outcome*. Take, for example, psychoanalytic theory and behavioral modification theory, both of which may address the problem of obesity. Although one theory addresses the childhood origins of obesity and the other the environmental factors influencing overeating, both can be used

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to assist patients to lose weight. However, behavior modification appears to bring about more major and enduring changes in eating habits. In this example, no comparison is being made of the internal consistency of empirical support of the two theories; the point is to illustrate the efficacy of one theory over another in achieving desired behavioral outcomes.

Nursing as a health profession and as a scientific discipline has come a long way,

but it still has much to achieve. As a discipline, it needs to struggle through and beyond the preparadigm stage of scientific development. This will entail challenges and risks, but the process should help create a corps of nurse-scientists able to develop knowledge which reflects sensitivity to problems in clinical practice, and a corps of their clinical counterparts capable of evaluating and using this knowledge.

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